DOCUMENT RESUME

ED 266 098 SP 026 967

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TITLE Differential Stress Levels in Primary Versus Secondary Classrooms.
PUB DATE [85]
NOTE 26p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Comparative Analysis; *Elementary School Teachers; Elementary Secondary Education; Job Satisfaction; *Secondary School Teachers; *Stress Variables; *Teacher Attitudes; Teacher Persistence

ABSTRACT

A study investigated sources of stress among 61 elementary and secondary school teachers who had attended an inservice stress clinic. Teachers completed test or survey instruments which collected data on problem situations for classroom teachers, including personal information on their teaching situations, job satisfaction, consideration of leaving the profession, and frequency of experiencing minor discomforts such as headaches. Although K-6 grade teachers showed higher levels of distress on all of the stress related items, the magnitude of their differences from 7-12 grade teachers was usually small and nonsignificant. Job satisfaction appeared to increase with teaching higher grade levels. More reports of routine problems and life change adjustments correlated with lower grade levels. Teachers with higher job satisfaction scores thought less frequently about leaving the profession. (CB)

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DIFFERENTIAL STRESS LEVELS IN PRIMARY VERSUS SECONDARY CLASSROOMS

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As a research literature emerges identifying stressors in the classroom, investigation should also study inherent differences which exist between primary and secondary classrooms. While the primary teacher (K-6) usually works with fewer students on a given day, there are more frequent demands for individual attention and more frequent interactions with parents. In the secondary classroom (7-12), teachers work with larger numbers of more independent students. Further, secondary students are more likely to become involved in serious anti-social behaviors such as threats to the teacher, vandalism, and drug problems. The present study focuses on reactions of 70 teachers in these differential situations, evaluating stress levels and tendencies toward "burnout". A central theme will involve the issue of "frequency" of stressor as compared to "intensity" of stressor, and how this issue may be translated into adverse reactions by primary and secondary teachers.

Seyle's pioneering work on stress (Selye, 1956, 1976) has led to a vigorous research literature over the past decade. Originally, there was an emphasis on major life changes as stressors (Holmes and Rahe, 1967) and study of the manner in which these events led to specific diseases such as cancer, psychosomatic disorders, and coronary heart disease (CHD) (Cohen, 1979; Fox, 1978; and Weiner, 1977). Jenkins identified apparent personality differences which aggravated the reaction to stressors in his work on Type A and Type B personalities (Jenkins 1971, 1976). The present author became involved in research studies of daily stressors in health concerns (Friedlob & Jones, 1982; Friedlob, Ange, & Jones, 1983; Jones and Oglesby, 1983) which repeatedly demonstrated the importance of minor or "microstressors" in the etiology of stress related disorders.

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Microstressors were identified by spontaneous responses of CHD victims (Friedlob, 1983) collected over an 18 month period. These were best characterized as "nuisances" in everyday life such as the reactivity to traffic jams, bouncing a check, indiscretions of others, home and job related demands. Similar work had been completed earlier by McLean (1976) and contemporaneous work on the same concept was being completed by Monroe (1983) and on a "daily hassles" scale (Delongis, Coyne, Dakof, Folkman & Lazarus, 1982). The Hassle Scale has emerged as the leading instrument for measuring reactivity to stressors (Lazarus, Delongis, Folkman, and Gruen, 1985). These authors regard stress as:

> "...a complex rubric, like emotion, motivation, or cognition, rather than as a simple variable. The meaning sphere of stress is defined by many variables and processes that are reflected in the person's appraisal (emphasis added) of a relationship as relevant to well-being and taxing or exceeding his or her resources."(p. 776)
>
> and
>
> "The guiding feature of an endorsement of any item as a hassle is the mediating process of appraisal in which the experience is regarded as negative and salient." (p.776)

The present author concurs in this definition. Specifically, it is believed that the frequency of demands for attention, etc. in the primary classroom lead to the anticipation of continued arousal and response to these demands. Each day in the classroom will bring these unavoidable and frequent demands, and each day will result in a higher level of autonomic nervous system functioning in K-6 teachers. Pupils will talk, move around continuously in their seats, ask for permission to go to the bathroom, not follow directions, require attention in the lunchroom, require attention at recess, require more frequent meetings with parents, etc. As pupils advance through the grades, fewer of these high frequency microstressors or hassles confront the teacher. In some cases, the extra attention and role of the caretaker are no

longer expected of the teacher. In other cases, many of the problem students are selected out, particularly by high school. This is not to say that the 7-12 teacher experiences a low level of environmental stressors. As will later be demonstrated, all teachers seem above population norms in the major indicators of stress. Further, the 7-12 teacher is far more likely to experience an intensely stressful event (threats to self, drug problems, pregnancy, etc.). However, the K-6 teacher is employed in a situation which expects the caretaker role. Their appraisal of microstressors must include the expectation of negative demands on a day to day basis, with little relief even possible.

The developing literature on stressors in teaching has recently been reviewed by Hoover-Dempsey (1983). Student concerns and administrative policy were recurring themes. However, differing methodologies have frequently been used, producing divergent findings. The Teaching Events Stress Inventory (TESI) has been studied most often, although the Maslach Burnout Inventory (MBI) and the Purdue Teacher Opinionnaire (PTO) have contributed other information. Geographical differences undoubtedly exist. For example, a factor analytic study in New Orleans (Chachere, Zinkgraf, and Meza, 1982) identified five clusters related to stressful teaching events: 1) threats to self, 2) planning, management, and evaluation, 3) physical facilities and administrative procedures, 4) interpersonal relations, and 5) time management. A factor study of the TESI (Alexander, Martray, & Adams, 1983) completed in Kentucky suggested a four factor structure including: 1) administrator-teacher relationships, 2) teaching tasks, 3) teacher-student relationships, and 4) a general concerns factor. Hoover-Dempsey (1983) concludes that

the evidence is building, although there is difficulty in assimilating the divergent findings. Further, much of the evidence is anecdotal. Often overlooked are "ecological" factors in the personal lives of teachers. However, the general picture of teaching is quite clear. In fact, Scalise & Meza (1982) have shown that even the preservice teacher education student perceives their future role in the classroom as potentially stressful.

Less research has identified health related issues which might occur as a consequence of higher levels of daily stressors. Blackwell (1982) reported differences related to sex, race, tenure status, and teaching level in Alabama schools. Adams, Martray, and Alexander (1982) report depression and emotional exhaustion as being related. Blackwell (1983) studied the Holmes Rahe Inventory (see p. 1) and Type A vs. Type B personality characteristics in addition to coping strategies. While life changes (Holmes Rahe)were not well related to teaching stress, individual differences in response to teaching stress appeared to be a more promising area for research. Fewer Type A individuals were identified among teachers than might have been anticipated from study of stress reports. Additional health-related factors do appear in the reports on teacher burnout (below).

More attention has been focused on variables influencing Teacher Burnout owing to the expense of training professionals who change careers early in life. Borthwick, Thornell, & Wilkinson (1982) evaluated responses of over 1000 Mississippi teachers to the MBI and demonstrated that: 1) younger teachers express higher burnout tendencies, 2) females express burnout tendencies more than males, and 3) white teachers express higher burnout tendencies than minority teachers.

Hooper & Shelton (1982) used the PTO and the MBI with Mississippi teachers, reporting that intensity and frequency scores on the MBI were significantly related to the PTO. Teachers who experienced more job satisfaction were less frequently and less intensely emotionally exhausted and depersonalized. In addition, they felt a sense of personal accomplishment in teaching more frequently and intensely. Less tendency toward burnout was found in this satisfied group, who were typically older, more experienced, female teachers in the higher grade levels. In New Orleans schools, Chachere, et. al. (1982) reported that 85% of teachers leaving the profession cited physical and mental stress resulting from classroom management and discipline as the primary reason for departure. In a study which examined burnout tendencies in teachers versus coaches, Lay (1982) found that more differences related to burnout were found on frequency dimensions of the MBI, as compared to the intensity dimensions of the MBI. Emotional exhaustion, depersonalization, and personal accomplishment were all involved. Adams, et. al. (1982) showed that the emotional exhaustion measure provided on the MBI was predicted by many professional and school stressors in Kentucky teachers. As noted previously, these authors also found that MBI facors were significantly related to life stressors symptomatic of depression. Further, emotional exhaustion was predicted by school based stressors that were of a routine nature, but <u>not</u> necessarily of high intensity. Finally, Tishler & Ernest (1984) replicated a Texas study on burnout in Alabama teachers. Fully 37.7% were seriously considering a career change (38.4% in the Texas sample). Significant dissatisfactions included 1) lack of opportunity to advance, 2) loss of status, 3) negative public image, 4) lack of parental support, and 5) too much stress.

The papers cited were generally from the MSERA region and thus likely to be more relevant to the present report, completed in Knoxville, Tennessee. A general summary of these findings includes: 1) teachers are apparently experiencing high levels of stress, 2) the frequency of stressor seems at least as important as the intensity of stressor, 3) routine, daily stressors are frequently associated with job dissatisfactions, and 4) those teachers reacting with levels of stress are more likely to burn out. The report by 85% of New Orleans teachers resigning from public school teaching seems to tie these findings together better than any other general statement - the main reason for leaving was the physical and mental stress resulting from classroom management and discipline problems (Chachere, et. al., 1982).

The present report grew from a series of stress clinics held in a metropolitan city in the Southeast. In all, seven clinics were conducted at various locations - hospitals, on site at businesses, at the University of Tennessee, at State Technical Institute, and for in-service education of public school teachers.

METHOD

The primary focus of this report is on the 61 of 70 teachers from city and county schools who attended two in-service stress clinics held at the Knoxville City/Knoxville County Teachers Center. Nine teachers returned unusable survey instruments or requested to not be included in a formal report of the group findings. 53 female and 8 male teachers were included in the sample, ranging in age from 22 to 61. All teaching levels were represented with an average grade level of 6.17 (SD=4.03). Years teaching ranged from 2 to 33, averaging 11.82 (SD=7.49). Two groups of approximately equal size were formed for analysis of results representing grade level factors (K-6=31 teachers; 7-12=30 teachers).

An optional Personal Stress Evaluation was completed for all participating teachers which involved questions about Problem Situations for Classroom Teachers (PROBLEMS), the Hopkins Symptom Checklist (HSCL), the Holmes Rahe Schedule of Recent Experiences (H/R), and Personal Infomation on their Teaching Situation, Job Satisfaction (JOB/SAT), Frequency of Considering Quitting Teaching Permanently (QUIT), Frequency of Experiencing Minor Discomforts (DISCOM) such as headaches, acid stomach, coldness in the extremities (COLD EX.). and a space for listing major medical difficulties. Other variables were taken from these sections including Grade Level (GRADE), Years Teaching (YEARS), age (AGE), and Estimated Number of Hours Sleep/Night (SLEEP). These eleven variables are presented descriptively in TABLE ONE - K - 12 TEACHERS (p. 11).

PROBLEMS was a variable studied by requesting that teachers write down those recurring situations that led to distress in the following situations:

1.0 In The Classroom

2.0 Dealing With Other Teachers

3.0 Dealing With Parents Of Pupils

4.0 Dealing With Administration Within Your School

5.0 Dealing With The Central (City or County) Administration

The frequency of items listed under each of the catagories was summed to provide the PROBLEMS score for each teacher. While the content of these responses is of interest, they are beyond the scope of the present report. Descriptive statistics by grade level (K-6 or 7-12) are presented in TABLE TWO - PROBLEMS REPORTED BY TEACHERS (p. 11).

This format for assessing PROBLEMS was preferred to one of the standardized instruments such as the Teaching Events Stress Inventory for two reasons. First, recognizing an event as stressful and marking that on a checklist such as the TESI distorts the frequency score. For example, if a teacher was not thinking about pupils talking in class, that item would remind the teacher of an event that probably had been a stressor at some time in the past. The PROBLEMS format is open ended, allowing for listing of those events that are bothering the teacher at the present time. The only prompts are the catagory headings (Classroom, Dealing With Other Teachers, etc.). When the teacher spontaneously lists a microstressor (hassle) in this format, that event must be playing a role in the appraisal process, necessary to meet the definition of stressor as outlined on page 2. While it is true that a teacher may forget some stressors in the PROBLEMS list, we can be sure that those which are listed are currently affecting their appraisal of teaching as a profession. A checklist, such as the TESI, has advantages in control and in identifying stressors that might affect all teachers. The PROBLEMS format, however, gives a better frequency count of the factors that are affecting the particular teacher most. Second, the open-ended PROBLEMS format allowed teachers to list items that might never have been included on one of the standardized checklists. Five blanks were provided for each of the five catagories, allowing up to 25 spontaneous responses. The teachers PROBLEMS score was simply the frequency of responses (0-25).

The Hopkins Symptom Checklist (HSCL, Derogatis, Lipman, Rickels, Uhlenhuth, and Covi, 1974) is one of the most widely used checklists for evaluating psychological distress related to somatic symptomology. It was derived, in part, from the Cornell Medical Index and further

developed at Johns Hopkins and other institutions, supported by funding from NIMH. Five primary dimensions are scoreable:

1) Somatization - response to distress with body (somatic) symptoms

2) Obsessive/Compulsive - response to distress with repetitive thoughts or behaviors

3) Anxiety - response to distress with overt symptoms of nervousness

4) Depression - response to distress with depressive symptoms

5) Interpersonal Sensitivity - response to distress with overly sensitive reactions to the behavior of others

Lazarus has usually employed the HSCL in his studies of hassles as the dependent variable. That is, hassles lead to increased scores on the HSCL, a practice also used in the development of the Microstressor Inventory by Friedlob and Jones. For the purposes of the present report, the HSCL raw scores from each scale were combined, yielding an overall measure of reactivity to distress. Descriptive statistics for the five subscales are presented in TABLE THREE - HSCL (p. 11) with groupings formed by K - 6 and 7 - 12 teachers.

A registered nurse also took blood pressure readings for those 48 teachers who desired that information. TABLE FOUR - BLOOD PRESSURE (p. 12) presents these data by grade level (K - 6 and 7 - 12).

Workshops were held for interested teachers between 4:00 and 6:00 pm on weekdays. Thus, there was a difference in the "rest" period for K - 6 and 7 - 12 groups. The elementary teachers were able to get out of school earlier, and should have had more time to relax than the secondary teachers. Since it will be reported that elementary teachers reported or were measured at higher levels of distress on all measures, this bias operates against the hypotheses promoted in the report. Arrangements for other times were not possible.

RESULTS

TABLE ONE shows descriptive statistics for all variables studied. It will be noted that an index of discomforts (DISCOM) and an index of cold extremities (COLD EX.) showed markedly skewed distributions ($SD > \bar{X}$). These will be omitted from further data analysis. Differences between K-6 and 7-12 teachers on these variables were in the direction predicted by the hypothesis that K-6 teachers experience higher levels of distress. However, similar questions appear on the HSCL, so data is not really lost. TABLE ONE is found on p. 11.

TABLES TWO (PROBLEMS) and THREE (HOPKINS SYMPTOM CHECKLIST) also appear on p. 11. On the PROBLEMS table, it will be seen that in five of five comparisons, K-6 teachers report more problems than 7-12 teachers. Similarly, the HSCL table shows that K-6 teachers report more symptoms of distress in all five catagories. The differences for these ten comparisons are small, but represent a perfect relationship to the hypothesis that K-6 teachers experience more distress.

TABLE FOUR (Diastolic & Systolic Blood Pressures) shows that the same pattern holds for small differences in blood pressure for K-6 vs. 7-12 teachers. TABLE FIVE (Holmes/Rahe Recent Life Changes Scale) indicates that K-6 teachers report life changes more frequently and more intensely. TABLE SIX (Tendency to quit Teaching shows a more pronounced tendency to QUIT among K-6 teachers. Note that the direction of the QUIT score is reversed in that a lower score represents a more frequent desire to QUIT. TABLE SEVEN shows that K-6 teachers report less Job Satisfaction (measured by responses to items concerning interest in subject matter plus intangible rewards for teaching plus salary). Finally, TABLE EIGHT shows a fractional decrease in reported hours of sleep per night for K-6 teachers. TABLES FOUR through EIGHT are found on page 12.

TABLE ONE

Descriptive Statistics - K - 12 Teachers

Variable	Mean	Standard Deviation
PROBLEMS	11.8361	5.1839
HSCL	75.2295	22.8001
H/R	250.9675	158.2164
YEARS	11.8197	7.4933
JOB/SAT	17.3115	4.6674
QUIT	2.6082	1.1540
AGE	37.3443	10.0497
SLEEP	6.7295	1.1276
DISCOM	3.2459	3.4480*
COLD EX.	1.1721	1.9384*

* markedly non-normal distributions

TABLE TWO

Problems Reported By Teachers

Level		1.0 Classroom	2.0 Teachers	3.0 Parents	4.0 Administration	5.0 Central Office	
K-6	$\bar{X}$	3.84	2.28	2.88	2.53	1.72	N=31
	SD	1.48	1.85	1.43	1.54	1.37	
7-12	$\bar{X}$	3.53	2.07	1.63	1.30	1.30	N=30
	SD	1.81	1.72	1.43	1.58*	1.51*	

* markedly non-normal

TABLE THREE

Hopkins Symptom Checklist

Level		Somatization	Obsessive/ Compulsive	Interpersonal Sensitivity	Depression	Anxiety	N
K-6	$\bar{X}$	20.38	15.84	13.09	18.94	12.22	31
	SD	6.83	4.56	4.26	6.35	4.00	
7-12	$\bar{X}$	16.66	14.07	11.17	17.83	10.07	30
	SD	6.14	5.97	3.08	6.71	3.48	

TABLE FOUR

Blood Pressures By Level

Level		Systolic	Diastolic	N
K - 6	$\bar{X}$	132.5520	80.4138	29
	SD	17.3399	14.3666	
7 - 12	$\bar{X}$	129.7141	78.4762	31
	SD	20.3006	10.8614	

TABLE FIVE

Holmes/Rahe Inventory By Grade Level

Level		Number Endorsed	Score	N
K - 6	$\bar{X}$	11.06	293.653	31
	SD	6.30	177.189	
7 - 12	$\bar{X}$	8.00	209.534	30
	SD	4.59	126.682	

TABLE SIX

Tendencies to Quit Teaching

Level		QUIT Score*	N
K - 6	$\bar{X}$	2.50	31
	SD	1.08	
7 - 12	$\bar{X}$	2.73	30
	SD	1.31	

* Lower score indicates higher frequency of QUIT concern

TABLE SEVEN

Job Satisfaction (JOB/SAT)

Level		JOB/SAT Score	N
K - 6	$\bar{X}$	15.9219	31
	SD	4.7232	
7 - 12	$\bar{X}$	17.3115	30
	SD	4.6674	

TABLE EIGHT

Sleep per Night (Hours)

Level		Hours	N
K - 6	$\bar{X}$	6.6719	31
	SD	0.8670	
7 - 12	$\bar{X}$	6.7931	30
	SD	1.3727	

In all 17 of 17 comparisons of means, K-6 teachers show a higher degree of distress. If one adds in the variables DISCOM and COLD EX. from TABLE ONE, the figure becomes 19 of 19. The actual differences are usually small and nonsignificant in this sample size (N=61). However, the pattern is perfectly repeated for each of 19 variables.

Teachers as a group show higher mean scores on the HSCL and HOLMES/RAHE Checklist than did other groups who went through similar stress clinic training. However, the elevations in these scores seem due primarily to the K-6 teachers, as TABLE NINE (below) shows:

TABLE NINE

Comparison of Teachers to Other Groups

Group	N	H/R	Hopkins Symptom Checklist					Mean Age
			Soma.	Ob/Comp	Int. Sens.	Depres.	Anx.	
Business	64	142.8	16.3	12.6	13.4	15.8	8.5	40.3
Hospital (1)	35	206.3	18.8	14.2	12.1	19.9	12.1	35.0
Hospital (2)	40	139.0	16.5	13.2	11.8	16.5	11.2	39.6
CROP Control	29	149.8	16.9	12.5	9.7	14.2	9.2	52.1
CROP	45	155.2	17.4	12.4	9.6	14.4	9.2	54.6
All Teachers	61	251.0	18.6	15.0	12.1	18.4	11.2	37.3
K-6 Teachers	31	293.7	20.4	15.8	13.1	18.9	12.2	35.8
7-12 Teachers	30	203.9	16.7	14.1	11.2	17.8	10.1	39.0

Briefly, the groups included salaried and hourly employees at two local businesses, two hospital stress clinics for the general public, the CROP group (Cardiovascular Rehabilitation of Outpatients Program) who had all experienced heart attacks, a control group for the CROP group, and the teachers. Worthy of note is the fact that K-6 teachers have the following ranks among the seven groups: First on Holmes/Rahe, Somatization, Obsessive/Compulsive, and Anxiety. They rank second on Interpersonal Sensitivity and Depression.

A multiple correlation analysis was conducted on the nine variables remaining after deleting the non-normal variables from TABLE ONE. Results are displayed in TABLE TEN (p. 15). GRADE level was found to be related to JOB/SAT (+.29497), expressed PROBLEMS (-.22731), Holmes Rahe (H/R) scores (-.27114), and AGE of teacher (.24185). PROBLEMS expressed were related to Hopkins Symptom Checklist (.38811), expressed tendencies to QUIT (.31013) and inversely related to the amount of SLEEP (-.30002). The Hopkins Symptom Checklist (HSCL) was related to the H/R (+.52863) and to expressed tendencies to QUIT (.34010). The HSCL was also inversely related to SLEEP (-.30062). The H/R was related to SLEEP (-.33581). YEARS teaching was strongly related to AGE (+74691). Finally, the ratings of JOB/SAT were related to AGE (.28247) and inversely related to expressed tendencies to QUIT (-.48099).

The consistent pattern of relationships will be discussed further in the next section. However, these relationships did form the basis for selecting five stepwise regression models. Default parameters on MICROSTAT were used for the stepwise regressions and included F = 3.00 to include a variable in a given step and a minimum Tolerance of .001. The first model with GRADE as the dependent variable was significant. However, examination of the standardized residuals plot showed a linear trend in errors related to GRADE level (Durbin-Watson D = 0.5261). No data transformations were attempted and these results were discarded for the present report.

The second regression model used QUIT as the dependent variable. HSCL and JOB/SAT were retained in the final regression model which produced a multiple R of .5412 (R^2 = .2926; Adjusted R^2 = .2685). The adjusted R^2 is the best predictor of variance accounted

TABLE TEN (N=61)

Correlation Matrix For K - 12 Teachers

VARIABLE	GRADE	PROBLEMS	HSCL	H/R	YEARS	JOB/SAT	QUIT	AGE	SLEEP
GRADE	1.0000								
PROBLEMS	-.2273*	1.0000							
HSCL	-.1568	.3881*	1.0000						
H/R	-.2711*	.1727	.5286*	1.0000					
YEARS	.1341	-.0184	-.0337	-.1280	1.0000				
JOB/SAT	.2950*	-.1931	-.2020	-.0536	.1639	1.0000			
QUIT	.0354	-.3101*	-.3401*	-.1226	.1642	.4810*	1.0000		
AGE	.3419*	-.0850	-.0804	-.2096	.7470*	.2825*	.2117	1.0000	
SLEEP	-.0254	-.3399*	-.3006*	-.3358*	.0346	.0194	-.0444	-.0461	1.000

* p .05, 1 tailed (Critical r = + 0r - .21273)

Summary of Significant Bivariate Correlations

CORRELATE	DIRECT RELATIONSHIP		INDIRECT RELATIONSHIP	
GRADE	JOB/SAT	+.29497	PROBLEMS	-.22731
	AGE	+.24185	H/R	-.27114
PROBLEMS	HSCL**	+.38811	SLEEP	-.30002
	QUIT**	-.31013		
HSCL	H/R **	+.52863	SLEEP	-.30062
	QUIT**	-.34010		
H/R	----------		SLEEP	-.33581
YEARS	AGE	+.74691	----------	
JOB/SAT	AGE	+.28247	QUIT**	+.48099

** QUIT - The lower the QUIT score, the more frequently a teacher expresses a desire to QUIT. Therefore, these correlations are classified in reverse of their actual sign.

for in new samples of teachers, including an estimated "shrinkage". These results are significant ($F=12.011$ with $2,58$ df; $p < .001$). Full results for this and subsequent regressions are presented in TABLE ELEVEN (p. 17).

The third regression model used the Hopkins Symptom Checklist (HSCL) as the dependent variable. PROBLEMS, the H/R SCALE, and expressed tendencies to QUIT remained in the final stepwise selection model with a multiple R of .6396. $R^2 = .4091$ accountable variance with adjusted $R^2 = .3780$ for estimated shrinkage. This model was again significant ($F=13.155$ with $3, 57$ df; $p < .001$).

The fourth regression model used expressed PROBLEMS as a dependent variable, with GRADE level, expressed tendencies to QUIT, and SLEEP remaining in the final stepwise result. At step 4, the HSCL was removed from the equation to allow a higher final R^2, despite the fact that HSCL had the strongest initial F for inclusion. The final model had a multiple R of .5216. $R^2 = .2721$ and adjusted $R^2 = .2338$. Again the model reached significant levels ($F=7.103$ with $3,57$ df; $p < .01$).

The fifth regression model used JOB/SAT as a dependent variable. GRADE level and tendencies to QUIT remained as the final stepwise predicters. The multiple $R = .5556$; $R^2 = .3087$; Adjusted $R^2 = .2849$. This final regression model was also significant ($F=12.951$ with $2,58$df; $p < .001$).

TABLE ELEVEN

Results of Stepwise Regressions

MODEL TWO: Dependent Variable - QUIT

Independent Variable	Regression Coefficient	Standard Error	F(1, 58)	Probability	Partial r^2	REGRESSION F
HSCL	-.0128	.0057	5.047	.02850	.0800	12.011 with 2,58 df
JOB/SAT	.1063	.0279	14.535	.00034	.2004	
Constant	1.7328					

MODEL THREE: Dependent Variable - HSCL (Hopkins Symptom Checklist)

Independent Variable	Regression Coefficient	Standard Error	F(1, 57)	Probability	Partial r^2	REGRESSION F
PROBLEMS	1.0734	.4759	5.087	.02797	.0819	13.155 with 3, 57 df
H/R	.0664	.0149	19.782	.00004	.2576	
QUIT	-4.1071	2.1217	3.747	.05786	.0617	
Constant	56.5648					

MODEL FOUR: Dependent Variable - PROBLEMS

Independent Variable	Regression Coefficient	Standard Error	F(1, 57)	Probability	Partial r^2	REGRESSION F
GRADE	-.2898	.1456	3.964	.05130	.0650	7.103 with 3, 57 df
QUIT	-1.4290	.5084	7.900	.00676	.1217	
SLEEP	-1.6537	.5202	10.107	.00239	.1506	
Constant	28.4809					

MODEL FIVE: Dependent Variable - JOB/SAT (Job Satisfaction)

Independent Variable	Regression Coefficient	Standard Error	F(1, 58)	Probability	Partial r^2	REGRESSION F
GRADE	.3225	.1266	6.491	.01352	.1006	12.951 with 2, 58 df
QUIT	1.9055	.4418	18.601	.00006	.2428	
Constant	10.3510					

DISCUSSION

Extensive measures of 61 teachers and some related data on stress clinic populations have been presented. A summary of the major results should include:

1) K-6 Teachers show higher levels of distress on 19 of 19 comparisons with 7-12 teachers, although the magnitude of these differences was usually small and non-significant.

2) K-6 Teachers show the highest levels of distress when compared to teachers in general or to other populations. It might be added that two sets of data on college undergraduates were not used in these comparisons, owing to the large age differences. K-6 Teachers are also far above the scores of these two groups.

3) Multiple correlation analysis shows the following significant results:
   - 3.1 The higher the grade level, the higher the job satisfaction.
   - 3.2 The lower the grade level, the higher the reports of routine problems.
   - 3.3 The lower the grade level, the higher the reports of life change adjustments.
   - 3.4 The higher the reports of problems, the greater the psychological symptomology, the greater the reduction in sleep, and the greater the expressed desires to quit teaching.
   - 3.5 The greater the reports of psychological symptomology, the higher the expressed tendencies to quit teaching, the higher the life change adjustment score, and the less the time slept.
   - 3.6 The higher the job satisfaction score, the higher the grade level and the lower the expressed desire to quit teaching.

4) Multiple regression analysis of five possible models yield significant stepwise regression equations for the following dependent variables:
   - 4.1 Grade level, although an autocorrelation invalidates present results.
   - 4.2 Expressed tendencies to quit are associated with high scores on psychological symptomology and low job satisfaction scores.
   - 4.3 Psychological symptomology is associated with frequency of routine problems reported, with high life change adjustment scores, and with high frequencies of expressed desires to quit.

4.4 Frequency of concern over routine problems is associated with grade level, expressed tendencies to quit, and with lower sleep.

4.5 Job satisfaction is associated with higher grade level and with lower expressed tendencies to quit teaching.

That these findings must be considered exploratory in nature cannot be emphasized enough. There is a low subject/variable ratio in this report (61Ss/9variables) and the literature review demonstrates the caution needed when sampling only one geographical region. The author does not intend to generalize these findings to the population of teachers in the MSERA region or elsewhere. The pattern of findings is considered promising , however, for understanding some of the serious difficulties associated with classroom stressors and burnout.

The reported frequency of recurring and routine problems is viewed as the salient vector in understanding grade level differences in psychological symptoms, tendencies toward burnout, and lower job satisfaction. As such, the routine problems reported by teachers may be considered as analogous to the "hassles" in Lazarus's Stress-Appraisal Model (Lazarus, et al, 1985). Most of the high frequency, routine problems reported by teachers (particularly K-6) are unavoidable, and the teachers know that. Development of coping strategies as proposed by Blackwell (1983) should be pursued. Attention should be given to the appraisal process in further development of coping strategies.

It should be noted that a challenge has been mounted to the Lazarus research by Dohrenwend & Shrout (1985). Specifically, these authors argue that the "Hassles" Scale items contain similar psychological symptomology to the Hopkins Symptom Checklist. Thus, a correlation exists between the independent variable (hassles) and the dependent variable (HSCL) in most of the reports by Lazarus and his colleagues.

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Of course, such a correlation would exist whether hassles were causal in developing psychological symptomology or not. These are simply two ways of measuring the same psychological process. The present report bears on this dispute in that the PROBLEMS score is based on the spontaneous reports of teachers concerning routine matters in the classroom, with other teachers, with parents, and with various administrative offices. Still, these routine problems are clearly associated with elevations of psychological symptomology on the Hopkins Symptom Checklist ($r = .3881$, $p < .05$). The impact of these high frequency, routine disturbances on stress measures has been noted in other MSERA reports. It would be far fetched to argue that these relationships have an inherent correlation with psychological symptoms. It would be equally farfetched to argue that K-6 classrooms are populated by individuals with tendencies toward psychopathology (while 7-12 classrooms are not)! The K-6 classroom teacher experiences higher frequencies of routine disturbance than does the 7-12 teacher. The present report brings somewhat minimal evidence to bear on the suggestion that these routine disturbances may be causative factors.

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